



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1459  
Alexandria, Virginia 22313-1459  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,244	08/10/2001	Tony S. Kautsal	A5604/T41700	4319
32388	7590	05/25/2004	EXAMINER	
APPLIED MATERIALS, INC. 2881 SCOTT BLVD. M/S 2061 SANTA CLARA, CA 95050				
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/927,244

Applicant(s)

KAUSHAL ET AL 5

Examiner

Luz L. Alejandro

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004 and 16 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 8-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d)
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States;

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 and 7 are rejected under 35 U.S.C.102(b) as being anticipated by  
Ohashi et al., U.S. Patent 6,139,983.

Ohashi et al. shows the invention as claimed including the invention substantially as claimed including a substrate processing chamber having at least one component including a wafer support member bearing a rare-earth containing at the surface of the plasma, for example, yttrium fluoride, bound to a parent material of alumina through an adhesion layer of yttrium oxide, such that the component exhibits resistance to etching in a plasma environment (see col. 1-line 60 to col. 4-line 9). Note that the surface layer of yttrium oxide is exposed to fluorine so as to create a yttrium fluoride compound at the surface exposed to the plasma.

Regarding the limitation of the adhesion layer being implanted, it should be noted that this limitation is directed to a method limitation instead of an apparatus limitation, and since an apparatus is being claimed as the instant invention, the method teachings

are not considered to be the matter at hand and do not patentably distinguish the claimed invention. Moreover, the examiner submits that the patentability of a product (i.e. the substrate processing chamber) does not depend on its method of production. If the product in the claimed invention is the same as a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Raoux, U.S. Patent 6,432,256

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Raoux shows the invention as claimed including a substrate processing chamber 10 having at least one component bearing a rare earth-containing coating bound to a parent material which can comprise alumina ( $\text{Al}_2\text{O}_3$ ) (see, for example, col. 1-lines 36-40) bound to an intervening oxide adhesion layer with a graded rare earth content (see, for example, fig. 5), such that the component which can be a chamber dome, chamber liner, cover plate, gas manifold, faceplate, or substrate holder (see abstract, lines 23-28) exhibits resistance to etching in a plasma environment.

With respect to claim 2, note that the rare earth-containing coating can be one of the rare earth oxides because inherently a portion of the surface containing the rare earth material will oxidize (see figs. 9-10).

Regarding claim 4, Raoux discloses forming a graded rare earth containing subsurface layer between a parent material and a rare earth containing coating in order to allow for a gradual transition of properties by implanting rare earth ions using a MEPIIID process (see col. 6-lines 37-64). Furthermore, it should be noted that the reference discloses the adhesion layer being implanted, but this limitation is directed to a method limitation instead of an apparatus limitation, and since an apparatus is being claimed as the instant invention, the method teachings are not considered to be the matter at hand and do not patentably distinguish the claimed invention. Moreover, the examiner submits that the patentability of a product (i.e. the substrate processing chamber) does not depend on its method of production. If the product in the claimed invention is the same as a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

Concerning how the subsurface rare earth oxide layer is formed (claims 5-6), such limitations represent process limitations that are not given patentable weight in apparatus claims.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1763

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being obvious over Ohashi et al., U.S. Patent 6,139,983.

Ohashi et al. is applied as above but fails to expressly disclose a rare earth oxide containing adhesion layer between the parent material and rare earth containing coating that is a graded subsurface layer. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the adhesion layer would be a graded layer because of the fluorine plasma treatment performed to form the rare earth containing coating which will produce a graded composition in the adhesion layer.

With respect to claims 5-6 concerning how the subsurface rare earth oxide layer is formed, such limitations represent process limitations that are not given patentable weight in apparatus claims.

### ***Response to Arguments***

Applicant's arguments filed 3/02/04 have been fully considered but they are not persuasive.

Applicant argues that the formation of the coating is different in the instant invention than in the Ohashi et al.. However, it should be noted that this limitation is directed to a method limitation instead of an apparatus limitation, and since an apparatus is being claimed as the instant invention, the method teachings are not considered to be the matter at hand and do not patentably distinguish the claimed invention. Moreover, the examiner submits that the patentability of a product (i.e. the substrate processing chamber) does not depend on its method of production. If the product in the claimed invention is the same as a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. Furthermore, the portions of the reference relied upon by applicant are directed to the sintering of the parent material and they are not relevant to the formation of adhesion layer.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 571-272-1430. The examiner can normally be reached on Monday to Thursday from 7:30 to 6:00.

Art Unit: 1763

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 571-272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Luz L. Alejandro  
Primary Examiner  
Art Unit 1763

May 24, 2004